

CLAIMS

1. A mounting arrangement for at least one optical  
5 component (14 to 18) in a planar lightwave circuit, the arrangement including:

- a substrate (10),
- an input optical fiber (12) associated with said substrate (10), and
- 10 - an output optical waveguide (20) manufactured in a given set of planar layers of said substrate (10), and
- said at least one optical component (14 to 18) mounted on said substrate (10) to transmit optical  
15 radiation from said input optical fiber (12) to said output optical waveguide (20),

characterized in that the arrangement comprises one of:

- a length of optical waveguide (22) manufactured  
20 on said substrate (10) in the same planar layers of said output optical waveguide (20), said length of optical waveguide (22) being interposed between said input optical fiber (12) and said optical component (14, 16, 18), whereby said optical component (14, 16,  
25 18) is interposed between said length of optical waveguide (22) and said output optical waveguide (20), and
- a length of optical fiber (24) associated to said substrate (10) between said optical component (14, 16, 18) and said output optical waveguide (20), whereby  
30 said optical component (14, 16, 18) is interposed between said input optical fiber (12) and said length of optical fiber (24).

2. The arrangement of claim 1, characterized in that said substrate (10) is a silicon optical bench (SiOB) support (10).

3. The arrangement of either of claims 1 or 2, characterized in that said substrate (10) includes at least one V-groove (12a, 24a) provided therein for receiving at least one of said input optical fiber (12) and said length of optical fiber (24).

4. The arrangement of claim 3, characterized in that said the substrate (10) includes respective V-grooves (12a, 24a) for receiving said input optical fiber (12) and said length of optical fiber (24), respectively, and in that said respective V-grooves (12a, 24a) have the same geometry.

5. The arrangement of claim 1, characterized in that it includes said input optical fiber (12) associated with said substrate (10) and said length of optical fiber (24), and in that said input optical fiber (12) and said length of optical fiber (24) are from the same fiber batch.

6. The arrangement of claim 1, characterized in that said input optical fiber (12) and said length of optical fiber (24) have respective end surfaces and in that said end surfaces are provided with an anti-reflective coating.

7. The arrangement of claim 1, characterized in that it includes the said output optical waveguide (20) and said length of optical waveguide (22) aligned along an input-to-output propagation path and having respective end surfaces, and in that said end surfaces are offset to the perpendicular to said propagation path.

8. The arrangement of claim 7, characterized in that, said end surfaces being offset to the perpendicular to said input-to-output propagation path,

the propagation path of radiation through said at least one optical component (14, 16, 18) is at an angle with respect to said main input-to-output propagation path.

9. The arrangement of any of the previous claims, characterized in that said at least one optical component (14 to 18) includes an optical isolator (16) interposed between associated input (14) and output (18) optical systems.

10. The arrangement of claim 9, characterized in that said isolator (16) is optimised for focused beams.

11. The arrangement of any of the previous claims, characterized in that said optical component (14 to 18) includes an optical filter (16) interposed between associated input (14) and output (18) optical systems.

12. The arrangement of any of claims 8 to 11, characterized in that said the respective input and output lenses (14, 18) are spherical or ball lenses.

13. The arrangement of any of the previous claims, characterized in that said optical component includes at least one spherical or ball lens (14, 18) and in that said the substrate (10) includes at least pyramidal hole (14a) for receiving said at least one spherical or ball lens (14, 18).

14. The arrangement of any of the previous claims, characterized in that said at least one optical component comprises a symmetrical optical system (14, 16, 18) having an internal image.